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Trapping, Anesthetizing, and Marking the Abert Squirrel

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Folding live traps placed at 250-foot intervals on a 1,000-foot grid provide a density of approximately two traps per acre for capturing the Abert squirrel. Procedures are described for anesthetizing squirrels for physical examination. Squirrels are marked with ear tags and colored collars for visual identification.

Keywords: Marking and trapping, *Sciurus aberti aberti*.

In several research studies on the Apache, Coconino, and Kaibab National Forests in Arizona we have tried different techniques of trapping, anesthetizing, and marking the Abert squirrel (*Sciurus aberti aberti*). Because we have been successful in our efforts, others may want to use the same methods or modify them for their own particular use. We make no claim of originality for marking devices and traps, but the scheme of operations and trapping grid are our own design.

Field Methods

We used a folding live trap (6 by 6 by 19 inches) manufactured by Tomahawk.[4] The Number 202 has a single door operated by a trip plate. This trap weighs 2½ pounds, and folds into a convenient 13- by 22- by 1-inch size for carrying or storage.

Forty-one traps were placed at 250-foot intervals in a grid, 1,000 feet on a side (22.95 acres). They were located so alternate rows had five and four traps, respectively (fig. 1). This design provides a distance of 177 feet between any two traps, and a density of approximately two traps per acre. We have found from experience that this trap density insures that a squirrel will have a good chance to come in contact with a trap.

When locating traps on the grid, the amount of sun hitting the trap must be considered. The Abert squirrel tends to become excited while he is enclosed and will move constantly. Traps should be placed in a shady location to reduce the chances of the squirrel dying from shock. We lost several squirrels in this manner.

Choice of bait is always an important consideration in capturing wild animals. We went through the usual process of bait trials, using everything from walnuts to apples. Raw, unshelled peanuts were by far the most successful bait.

After a site was selected and the traps were in place, we walked through the area spreading peanuts. We followed this procedure for about a week before the traps were opened. During the trapping period each trap was baited behind the trip plate and in front of the entrance as traps were checked.

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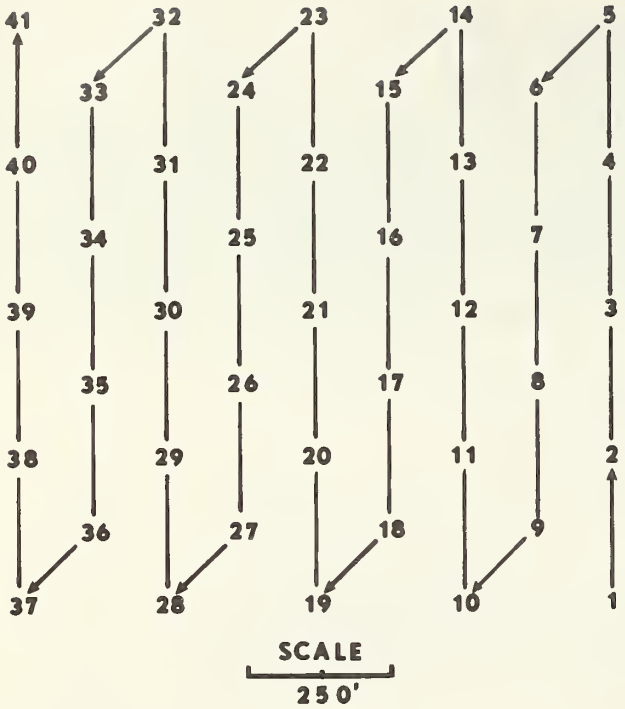

Figure 1.—Grid and traverse lines for checking traps.

Traps were checked twice a day—around noon and again just before dusk. These two times insure that a squirrel will not remain in a trap more than 7 or 8 hours and none will remain overnight. Our observations indicate squirrel activity peaks early in the morning and again in the late afternoon. Squirrels also tend to be more active on rainy days. In our studies two people checked traps. For a two-man operation, three sites (69 acres) with a total of 123 traps is the maximum number of traps that can be checked twice a day.

The question always arises on length of trap period. Initially we used a 20-day period, but analysis of our data from approximately 16,000 trap days showed a 15-day period would have accounted for 98 percent or our marked squirrels. Although we recommend a 15-day trapping period, it is wise to be a little conservative at first. Start with a 20-day period and later change to 15 if no unmarked squirrels are captured in the last 5 days.

Once a squirrel was caught, we removed it from the trap in a cone constructed from hardware cloth and lightweight canvas. The squirrel was marked with a numbered aluminum tag and a colored plastic washer. This tag and washer combination allowed recognition of an individual when it subsequently was recaptured or sighted. The ear tag we used was manufactured by National Band and Tag Company. In addition to ear tags, collars made from self-locking, nylon cable ties are excellent for visual identification. Cable ties are available in many sizes and colors from electronic equipment suppliers.

The Abert squirrel is easily anesthetized with Metofane (methoxyflurane). With the squirrel in the handling cone, the cone is inserted into the mouth of a plastic half-gallon, wide-mouth jar containing a cotton ball soaked with the anesthetic. Immobilization generally takes from 15 to 45 seconds. In several instances we had to expose the squirrel to the anesthetic for just over a minute before it could be handled safely.

A squirrel in a holding cone generally will snug his nose against the wire end. It is a good idea to stuff a cotton cloth into the end of the cone to prevent injury. A squirrel occasionally will cut itself on the trip plate or wire. In these cases we applied a topical antiseptic to reduce infection and to speed healing.

Over a period of 3 years we have successfully immobilized 60 squirrels without any losses. Each squirrel was allowed to recover from the anesthetic in a trap for 15 to 20 minutes before it was released. The trap was covered with a canvas cloth to exclude light. This tends to keep the squirrel calm and reduces injury.

Cost of trapping equipment is approximately $836. This includes 20 extra traps to replace losses. An outline of the items needed is as follows:

Item	Amount	Cost
Traps	143	$822.25
Ear tags	100	3.50
Ear tag gage	1	.60
Ear tag punch	1	1.00
Colored washers	100	1.25
Metofane	4 oz.	21.60
Handling cone construction	—	5.00
Lightweight canvas	3 by 4 in.	3.00
Antiseptic	—	5.00
	Total	$863.20

Summary

The procedures and equipment described have been successful for us in trapping, anesthetizing, and marking the Abert squirrel. The size and number of trapsites, number of traps per trapsite, and length of trap period we used provide researchers and managers with an efficient trapping design.